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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/687,849	10/17/2003	Bill Grubba	506422-0059	9582

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EXAMINER

ADDIE, RAYMOND W

ART UNIT	PAPER NUMBER
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3671

DATE MAILED: 11/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/687,849

Applicant(s)

GRUBBA, BILL

Examiner

Raymond W. Addie

Art Unit

3671

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 October 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>1/9/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 8 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 8 recites the limitation "said auger" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Since claim 1 does not provide for "an auger" it is unclear as to what element is being referred to in Claim 8.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 5-7, 11, 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Sehr et al. # 5,258,961.

Sehr et al. discloses a paving machine (1) having a vertically adjustable drag box (4) comprising a shearing device (4), a device for distributing an asphalt mixture (8), a proximity control device (6) comprising a hydraulic cylinder, at least 3 ultrasonic signal

generators (10, 11, 12), at least one signal receiver (15-21) associated with said signal generators and said proximity control device to raise and lower the shearing device (8) with respect to changes in the elevation of a reference surface, which may be ground, old concrete or newly laid concrete. See Col. 2, ln. 37-col. 4, ln. 18.

In regards to Claims 11, 12 Sehr et al. discloses the shearing device (8) is able to be proportionally raised or lowered in response to elevational changes in the reference surface, wherein the signals generated by the generators (10-12) are averaged by at least one of the signal receivers. See col. 4, lns. 2-18.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-7, 9, 11-15, 20, 22-24, 26, 27 rejected under 35 U.S.C. 103(a) as being

unpatentable over Horner # 6,554,030 B2 in view of Middleton et al. # 4,924,374.

Horner discloses a drag box (28) for placing an asphalt mixture on a surface (22) said drag box comprising:

A 1st device (36) for distributing said asphalt mixture over said surface.

A 2nd distributing device (28) for further distributing the paving material.

A shearing device (38) for further spreading said asphalt mixture over said surface (22).

A proximity control device (30/32) for independently raising respective outer ends of the shearing device (38).

What Horner does not disclose is the use of a distance measuring device able to raise and lower the shearing device in response to changes in the surface (22).

However, Middleton et al. teaches it is known to provide a plurality of ultrasonic transceivers (10) to the outer ends of a blade (280) of a grader (30) or paver (180), such that the ultrasonic transceivers are able to produce repeated signals indicative of the elevation of a ground surface (170/300), which is used as a reference surface. Said ultrasonic transceivers being associated with at least one signal receiver (85) to raise and lower the shearing device (38) via a proximity control device (50/60), in response to signals indicative of the height of the reference surface. Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made to provide the drag box of Horner, with an ultrasonic height control assembly, as taught by Middleton et al., in order to increase the smoothness of the formed asphalt. See Middleton et al. col. 6, ln. 48-col. 7, ln. 19; Col. 23, ln. 44-col. 24, ln. 44.

In regards to Claims 2-4 Horner discloses a prime mover (10) is utilized to pull the drag box (28), which also comprises confinement ends, in the form of skis (192). See Figs. 1-3.

In regards to Claims 5-7 Horner discloses the proximity control device can be in the form of at least one cylinder (30/32) for raising and lowering the shearing device; but does not disclose the use of sonar generators and receivers. However, Middleton et al. teaches it is known to provide a plurality of ultrasonic transceivers (10) to the outer ends of a blade of a prime mover (180), said ultrasonic transceivers being associated with at least one signal receiver (85) to raise and lower the shearing device (38) via a proximity control device (50/60), in response to signals indicative of the height of the reference surface. Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made to provide the drag box of Horner, with an ultrasonic height control assembly, as taught by Middleton et al., in order to increase the smoothness of the formed asphalt. See Middleton et al. col. 6, ln. 48-col. 7, ln. 19.

In regards to Claim 9 Horner discloses the shearing device can be in the form of a strike blade (124), having a lower edge (122) that "determines the thickness or depth of the layer of materials formed by the shearing device". See col. 5, lns. 7-20.

In regards to Claims 11-15 Horner discloses an extendable drag box, as put forth above with respect to claims 1, 3 but does not disclose the use of an ultrasonic height control assembly. However, Middleton et al., teaches it is desirable to provide a shearing device (40/280) with a plurality of ultrasonic height measuring transceivers (10), which are connected to respective ends of said shearing device (40/280), such that the

receiver (85) can send an averaged signal to the proximity control device to proportionally control the height and slope of the shearing device in response to elevational changes in the reference surface (170). See col. 5, Ins. 24-52; col. 23, ln. 43-col. 24, ln. 44; See Fig. 20.

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made to provide the drag box of Horner, with an ultrasonic height control assembly, as taught by Middleton et al., in order to increase the smoothness of the formed asphalt.

In regards to Claim 20 Horner discloses the distribution device (36) comprises at least one auger.

In regards to Claim 22 Horner discloses a method of leveling a surface using a drag box (28) comprised of a distribution device (36), a shearing device (38) and a proximity control device (30/32) for raising and lower said shearing device. Said method comprising:

Pulling said drag box (28) in a direction of travel

Applying an asphalt mixture to said surface while said drag box is moving.

Adjusting the height of the shearing device by manual, operator input.

Leveling said asphalt mixture using said shearing device.

Wherein said steps are accomplished in a single pass.

See col. 6, ln. 66-col. 7, ln. 38.

What Horner does not disclose is adjusting the height of the shearing device so that it is raised and lowered as the elevation of the reference surface changes.

However, Middleton et al., teaches it is desirable to adjust the height of a shearing device (280) in response to changes in the elevation of a reference surface. See col. 26, lns. 10-33.

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made to provide the method of leveling asphalt of Horner, with the method step of adjusting the height of the shearing device in response to changes in the elevation of a reference signal, as taught by Middleton et al., in order to make a smoother transition from one paving level to another. See col. 23, lns. 50-58; col. 26, lns. 10-33.

In regards to claims 23-26 Horner discloses in the method that the surface (170/300) can be a ground surface and the asphalt mixture can be substantially diluent-free, such as asphalt or the like. What Horner does not disclose is the method steps of measuring the elevation of the surface (170/300) using a signal generator. However, Middleton et al. teaches it is known to provide a plurality of ultrasonic transceivers (10) to the outer ends of a blade (280) of a grader (30) or paver (180), in order to measure the

elevation/altitude of a ground surface (170/300), which is used as a reference surface and process said signals using a signal receiver (85), in order to control the height of a shearing device forming the asphalt. Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made to provide the method of leveling asphalt of Horner, with the method step of measuring the elevation of a reference surface and processing the signal, as taught by Middleton et al., in order to make a smoother transition from one paving level to another. See col. 23, Ins. 50-58; col. 26, Ins. 10-33.

In regards to Claims 27-30 Horner discloses distributing an asphalt mixture with a distribution device (36), that has at least one auger. Stopping said drag box from moving in said direction of travel. Manually controlling said shearing device while said drag box is stopped. Moving said drag box in said direction of travel.

Wherein substantially planar movement of said shearing device is maintained during said stopping and moving steps. See col. 6, ln. 66-col. 7, ln. 23.

4. Claims 1-8, 15, 18, 20, 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Banks # 6,079,901 in view of Ferguson et al. # 5,201,604.

Banks discloses a prime mover (12) for pulling a drag box assembly (36), including confinement ends having skis (see Fig. 2); for placing an asphalt mixture on a surface to be paved, said drag box comprising:

A 1st device (24) for distributing said asphalt mixture over said surface.

A 2nd distributing device (30, 34) for further distributing the paving material.

A shearing device (36) for further spreading said asphalt mixture over said surface (22).

A proximity control device (in the form of a hydraulic cylinder, illustrated below station 22, in fig. 2) for raising and lowering the shearing device (36). See cols. 3-4.

Wherein said shearing device (36) is a variable width screed.

What Banks does not disclose is the use of a distance measuring device able to raise and lower the shearing device in response to changes in the surface to be paved.

However, Ferguson et al. discloses a sonic grade control assembly (26) for a paver (10) comprising: A plurality of signal generators (22) associated with a proximity control device (19) and a signal receiver (23), wherein a shearing device (17) can be raised and lowered in response to signals from the generators (22), that are indicative of changes in a surface (35) to be paved, thereby providing a smoother formed-asphalt road surface (38). See col. 6, ln. 24-col. 7, ln. 33. Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made to provide the paving machine of Banks with a sonic grade control assembly, as taught by Ferguson et al. in order to form a smoother traffic surface.

In regards to Claims 8, 18, 20, 21 Banks discloses the 1st distribution device (24) comprises a plurality of 12" augers (38.1-38.4), of which at least 2 counter rotate for mixing and distributing asphalt upon said road surface and the 2nd distributing device (30, 34) further comprises a single 12" auger (34). Although Banks does not explicitly recite how far the auger (34) is spaced from the shearing device (36); Banks clearly illustrates in Fig. 2, the 12" auger is spaced a distance; less than the radius of the 12" auger. Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to distance the auger (34) and the shearing device (36) less than 1" apart, as taught by Banks, in order to maximize the uniformity and homogeneous characteristics to the just augured asphaltic mixture, before compaction by the shearing device. See Col. 3, ln. 49-col. 4, ln. 23.

5. Claims 16, 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Banks # 6,079,901 in view of Ferguson et al. # 5,201,604, as applied to Claim 1 above and further in view of Richter # 6,033,147.

Banks in view of Ferguson et al. discloses a sonically controlled paving machine, wherein the ultrasonic sensors can be calibrated to form a desired paving thickness, for example 6". See Ferguson et al. Col. 6, Ins. 41-59. What Banks in view of Ferguson et al, do not disclose is the minimum thickness to which asphalt can be paved.

However, Richter teaches that asphaltically paved roadways often comprise multiple layers of varying thicknesses (d1, d2). Richter further teaches that each layer can vary between 2 cm and 8 cm forming a total pavement thickness between 8cm and 14cm. Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made to use the paving machine of Banks in view of Ferguson et al., to form asphalt layers between 1-6", as taught by Richter, in order to meet required specifications for roadway layer thickness. See Richter Col. 1, Ins. 39-55.

6. Claims 9, 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sehr et al. # 5,258,961 in view of Kieranen et al. # 6,227,761 B1.

Sehr et al. discloses a sonically controlled paving machine having a shearing device (8) that is raised and lowered by a hydraulic cylinder based on signals from ultrasonic sensors indicative of the distance to a reference surface. What Sehr et al. does not disclose is providing the shearing device (8) with a concave strike blade. However, Kieranen et al. teaches a sonically controlled paving machine having a shearing device (28) are advantageously provided with an auger (36), and a concave strike blade (32) in the form of a plow. Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made to provide the paving machine of Sehr et al., with a shearing device, as taught by Kieranen et al., in order to control the amount of paving material distributed in front of the spreading auger. See Figs. 9a-c; Col. 6.

7. Claims 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sehr et al. # 5,258,961 in view of Paetzold 6,036,353.

Sehr et al. discloses a paving machine having a hopper (unnumbered) and a distribution device (8) in the form of a conveying auger. What Sehr et al. does not disclose is the use of a pugmill. However, Paetzold teaches a paving machine can be advantageously provided with a unitized pugmill distribution device, in order to mix and distribute hot and cold mix asphalt for paving a roadway, due to the pug mill's ability to mix asphalt compositions with a high degree of accuracy. See col. 4, Ins. 41-47. Therefore, it would have been obvious to provide the paving machine of Sehr et al., with a pugmill distribution device, as taught by Paetzold, in order to maximize the homogenous characteristics of the mixed asphalt.

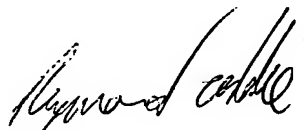
Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Gerosa # 3,561,334 discloses a process for paving thin layers of cold mix asphalt. Miller # 4,708,516 discloses an asphaltic pavement comprising a plurality of thin layers. Sovik # 5,362,176 discloses a paving machine with an edge detection system. Malone # 5,752,783 discloses a paving with radar screed control. Zachman et al. # 6,672,797 B1 discloses a linear transducer system for drag box paving machines.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Raymond W. Addie whose telephone number is 703 305-0135. The examiner can normally be reached on 8-2, 6-8.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas B. Will can be reached on 703 308-3870. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Raymond Addie
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10/30/04